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ABSTRACT

The effect of Title VII of the Civil Rights Act of 1964 on the numbers and status of women in the academic physical sciences is addressed, and historical trends since the beginning of the century regarding the participation of women in education and science are briefly reviewed. The percentage of women doctoral degree recipients grew steadily from 16 percent in 1920 until peaking at 21 percent in 1945, and then declined following World War II, reaching a low of 9 percent in 1954. Although higher education expanded rapidly in the 1950s and 1960s, the science fields, particularly the physical sciences, still do not have a large contingent of women faculty. As originally passed, Title VII prohibited sex discrimination by employers in hiring or firing; in compensation; in terms, conditions, or privileges of employment; or limiting, segregating, or classifying employees or applicants. It is claimed that the Equal Employment Opportunity Act of 1972 amendment did not clear up the confusion regarding definition of the goals to be achieved in implementing Title VII. Cases that set the precedent or that directly examined the status of women are reviewed, including two cases involving universities and women in science. Three levels at which cases brought forward under the Equal Protection clause of the Fourteenth Amendment may be considered are: rational relationship, strict scrutiny, and the middle-tier level. Controversy over using the clause is noted. It is concluded that the number of women employed in the physical science departments is not likely to be significantly influenced by current legislation. (SW)

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The Impact of Title VII on the Woman in Academic Science

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Introduction

Problems of women may not have been a major concern of Congress in the 1960's, but several items of legislation were passed which were thought to have considerable impact on the lives of working women. Among these was Title VII of the Civil Rights Act of 1964. Although this law has its limitations, it provides a barrier of sorts to sex discrimination by empowering federal agencies to hear complaints and interpret statutes, by giving complainants the right to sue, and by assuring the eventual hearing of the issues by the federal courts.

The Woman in Academic Physical Science

The plight of the woman who wishes to play an active role in the profession of her choice and cannot is nowhere more evident than in the area of academic physical science. In a 1976-77 survey of these faculties of the major universities across the country, it was found that 2.4% of the chemists, 6.7% of the astronomers, and 1.4% of the physicists and other physical scientists were women (Green, 1978; Kistiakowsky, 1980). Although the number of Ph. D. degrees awarded women in these physical sciences was small, the percentage of degrees awarded in these fields was a multiple of the percentage of women represented on these faculties.

The table on the following page indicates that while the percent of degrees awarded women has increased by nearly fifty percent in the seven year span treated, the actual number of doctorates awarded women was increased by only forty. The inflation in the percentage figure

is due to a 24% reduction in the total number of degrees awarded during these years.

Physical Science Doctorates Awarded Women, 1972-78

year	total awarded	total awarded women	percent awarded women
1972	4226	269	6.37
1973	4016	257	6.40
1974	3696	260	7.03
1975	3611	284	7.86
1976	3442	296	8.60
1977	3410	303	8.89
1978	3234	309	9.55

(Calculations made from data in Summary Reports from the Board on Human Resources, 1973, 1974, 1975, 1976, 1977, 1978, and 1979)

Historically, women have met considerable resistance to full participation in education in general and science in particular. Whether this arose from the parallel development of opposition to the education of women in Europe and the beginnings of the scientific age in the early part of the 18th century as proposed by Kistiakowsky (1980) or from the widely debated 19th century work of Paul Broca and his proposal that the smaller brain size of women indicated a measurable reduction in intelligence (Gould, 1978) is conjecture. The general attitudes of these times persisted until the end of the 19th century.

From 1906 to 1921, women occupied a significant proportion of the available positions in the fields of home economics (100%),

psychology (22.8%), botany and zoology (18.3%), but were reported to hold only 2.2% of the available positions in the physical sciences (Rossiter, 1974). Most of these positions were located in the several women's colleges, normal colleges, and nursing schools rather than the large universities and medical schools. In a 1921 study performed by the American Association of University Professors, 0.001% of the professorships at men's colleges and universities were held by women as compared to 68% of the positions at women's colleges, and 4% of the positions at coeducational institutions (Rossiter, 1974). The majority of the positions at the coeducational institutions occupied by women were in the home economics and physical education departments. In addition, Rossiter noted that women could locate no jobs in industry as chemists prior to World War I, and those women employed in academia were likely to be found in informal positions as assistants to their husbands.

By 1920, the first year in which the National Research Council recorded data on doctoral degrees granted, 16% of the recipients were women. The percentage grew steadily until it peaked at 21% in 1945, but began to decline following World War II, reaching a low of 9% in 1954 (Tidball & Kistiakowsky, 1976). This sharp decline has been explained in part by the advent of the G. I. Bill which permitted numerous men to attend college who otherwise may not have been able to afford the education (Hornig, 1980). Rossi explains

> That the proportion of women on college faculties declined during these years reflects, therefore, several processes ...women lost relative status as an unintended consequence of national policies to compensate veterans for wartime service through educational benefits; more stipends and research assistantships in sciences meant men graduate students could marry and raise a family before their degrees were completed; and an expanding profession with high status job openings gave an edge to the more geographically mobile

male members of the profession. (1973, p. 519)

Education and its institutions expanded rapidly in the 1950s and 1960s, but the proportions of women on the faculties did not keep pace with this growth. Acording to Hiestand, minorities suffer a decline in occupations which are undergoing rapid growth because these occupations draw more heavily on the majority group in the labor force at the time (1964).

Recent increased interest in the development of the intellectual talents of women was demonstrated by the creation of the President's Commission on the Status of Women and the numerous women's interest groups and women's centers. However, the science fields, particularly the physical sciences still do not have a large contingent of women participants. Of the 5,585 doctorates earned by women in 1976, only 296 were in physical sciences, engineering, 5.3% (National Research Council Summary Report...1979). This has occurred in conjunction with increased demand for physical scientists, demonstrated in stepped-up recruitment programs (Demand...,1979).

Although the number of women awarded the Ph. D. in chemistry in 1978 reached 12.7% (National Research Council Summary Report...1979). these same institutions are not hiring women for faculty positions (Green, 1980; Rawls & Fox, 1978; Raloff, 1978). The explanations for this situation range from legal to psychological and social restrictions. Raloff, "Science and Society" reporter for Science News calls it "fear of figuring" (15 March, 1975). Tobias says, "(It) is learned in conformity to sex-role expectations" (1978, p. 8). Yet studies have shown that girls perform as well in math and science courses in high school as do the boys ("Still many barriers," 1977) and surpass the grade point average in college science of the men in the same courses (Abelson, 1979).

Some investigators suggest sex discrimination practices as limiting the number of women employed in these positions (Broad, 1980; Randall, 1978; Young, 1978; Bryn, 1975). Others point to lack of available role models (Rawls & Fox, 1978; Bernard, 1976; Douvan, 1976; Pendleton, 1975). Vetter perceives conflicts between family and career commitments as a significantly limiting factor (1979), as do Holahan and Gilbert (1979), Walsh, (1978), and McClendon (1976). "The only thing wrong with women in science is that they don't have equal access to good jobs" (Hornig, 1979, p. 130).

To facilitate the elimination of barriers to women in academic physical science, the Senate Subcommittee on Health and Scientific Research encouraged Congress to authorize $23 million during 1981 for the purpose of encouraging women to pursue careers in science and mathematics. "Acknowledging that women have been denied equal education and employment opportunities in scientific and technical fields..," the Senate proposed an information clearing-house created for women in science which would provide materials helpful to young women considering careers in these areas (Roark, 1980, p. 15). On December 2, 1980, Public Law 96-516 allocating $30 million for the prupose of encouraging women and minorities to pursue careers in science and related fields was signed. In addition, the Rand Corporation in a study of mechanisms the Office for Civil Rights can use to improve institution compliance with civil-rights laws, has concluded, "The federal government must provide more incentives and apply more pressure if college administrators are to take seriously their responsibilities for enforcing laws barring bias against women..." (Fields, 1980, p 11).

The Evolution of Title VII

The legal aspects of the issue revolve principally around five items of legislation: Title VII of the Civil Rights Act of 1964 as amended by the Equal Employment Opportunity Act of 1972, the Equal Pay Act of 1963 as amended by the Education Amendments of 1972, Title IX of the Education Amendments of 1972, Executive Order 11246 as amended by Executive Order 11375, and various state Fair Employment Practices acts (Divine, 1976). The seeming reluctance of the courts to intervene in the hiring practices of institutions of higher education coupled with inconsistencies in the actions of agencies empowered to oversee university compliance with federal regulations may have resulted in the full force of these measures not being brought to bear.

The evolvement of Title VII is shrouded in uncertainty because, as the story goes, the Act was originally intended to deal with discrimination on the basis of race, national origin, and religion. According to Hill (1978) Representative Howard Smith of Virginia who opposed the passage of the Act sought to have it fail on the floor by inserting the proscription against sex discrimination. The amended Act passed in spite of Smith's efforts. Because there is a lack of dialog concerning the sex discrimination portion of the issue, the courts have little direction from legislative history to follow in interpreting the meaning and intended scope of the sex discrimination portion of the Act.

As it was originally passed, Title VII prohibited sex discrimination by employers in hiring or firing, in compensation, in terms, conditions, or privileges of employment, and limiting, segregating, or classifying

employees or applicants. Unions and other agencies were also subjected to comparable bans to their activities. Several exemptions were included, but the most important were those permitting sex differentiation if sex was a bona-fide occupational qualification, BFOQ (Larson, 1975) and the hiring practices of all educational institutions with respect to teachers (Divine, 1976). The original senate bill did not exclude educational institutions, but the exclusion was proposed by Senators Dirksen and Mansfield. It was not unusual for education to be exempt from legislative regulation because the state and federal governments generally felt that institutions of higher learning were best left under the direction of the scholars.

As amended by the Equal Employment Opportunity Act of 1972, Title VII prohibits discrimination by private employers (of more than 15 employees), unions, employment agencies, state and local governments, public and private educational institutions. In addition, it creates the Equal Employment Opportunity Commission which serves to oversee compliance with the Act. What the amendment did not do was clear up the confusion regarding definition of the goals to be achieved in implementing Title VII. Both the courts and the Equal Employment Opportunity Commission have continued to struggle with these kinds of definitions.

In Griggs V. Duke Power Co., the Court ruled that it was not necessary to show intent to discriminate for a case of discrimination to be made. All that need be shown was an uneven treatment between white males and any group protected by the Act. If the employer was found to be discriminating, it fell to him to show that the actions were business necessity or that '(T)hey were unrelated to the differential employment status of covered employees" (Portwood, 1979, p. 354).

Although the Griggs case did not clarify several items, it did serve to establish the precedent of "great deference" to administrative interpretations of the law. Through this doctrine, the decisions and explanations of the Equal Employment Opportunity Commission, EEOC, achieved implicit judicial approval. According to Portwood, the dissenting opinion in Albemarle v. Moody was the beginning of the end of the EEOC's broad, interpretive powers. As a result of Chief Justice Burger's strongly worded opinion, the guidelines set by the EEOC are not necessarily controlling in instances in which they conflict with accepted professional standards and expert opinions. Portwood describes this, and the subsequent cases the opinion impacted, as creating additional future confusion concerning the law's requirements and making it easier for employers to justify discrimination on the basis of business necessity.

The BFOQ exception in Section 703(e)(1) of the Act was an additional unresolved issue for some time. In the case of Phillips v. Martin Marietta Corp., the question of separate hiring practices for women and men, both with pre-school age children arose. Although the Supreme Court struck down the decision which favored the employer, it did so in such a manner that the BFOQ exception might be defined to include a hiring policy discriminating against women with pre-school age children. It was not until Dothard v. Rawlinson that the Supreme Court indicated that the BFOQ exception was a narrow exception, generally prohibiting discrimination on the basis of sex. In this case, the Court reaffirmed the findings in Griggs v. Duke Power and applied a disparate impact rationale in the findings.

In the "disparate impact theory," those practices which are "facially neutral in their treatment of different groups but that in fact

fall more harshly on one group than another and cannot be justified by business necessity" (Hill, 1978, p. 572), proof of discriminative motive is not necessary. An example if found in the Dothard case in which the 5'2" height restriction and 120-pound minimum weight requirement for the position of correctional counselor discriminated against a significant percentage of women. If the BFOQ put forth by the employer is found to be necessary for the job, the plaintiff has the opportunity to show that some other device that would not discriminate but would serve the employer's interest could be used in place of the limiting factor. Failing this, the BFOQ is legitimate.

Through actions in the cases mentioned above, and in the case of Reed v. Reed, the court began to closely examine the status of women. In Reed, the court found sex discrimination to violate the Equal Protection clause of the Fourteenth Amendment, the first decision of this type. As a result of this decision, the constitutionality of sex discrimination has been brought to question with considerable accompanying confusion.

In cases in which state action can be shown, it is sometimes possible for action to be brought under the Equal Protection clause of the Fourteenth Amendment, but to do so engages the question of the level at which the court will view the gender-based challenge. At present there appear to exist three levels at which these cases may be considered: rational relationship, strict scrutiny, and the "middle-tier" level. In the rational relationship or rational basis test, the burden of proof against the action of the government or its agent is with the plaintiff. If the agent is considered to use a classification that affects different groups differently, the reasonableness of the

classification must be shown. In applying this relatively relaxed standard, the court permits much latitude to the legislature in developing classifications. In the strict scrutiny standard, the government must prove a compelling state interest for the classification and the failure of any other method to achieve the state's goals. This stringent test is used to determine whether the Equal Protection clause has been violated. The middle-tier test, first utilized in Reed v. Reed involves evaluation that is closer than the examination applied in the traditional rational relationship test but not sufficiently close to be classified as strict scrutiny. Hill (1978) describes a woman's present status as middle-tier because women do not constitute a minority group and therefore do not require the Equal Protection clause of the Fourteenth Amendment. Apparently, a woman's position in a discrimination case cannot be argued from a constitutional standpoint because the constitution does not cover the issue.

Treatment of Cases

In private employment discrimination cases against universities, the typical pattern involves a demonstration of the variance between the number of women available and qualified for a position and the number employed in the position under question. Usually this is done by noting the difference between the percent of qualified Ph. D.'s available who are women and the percent actually employed. Unless explained by the employer to the satisfaction of the court, these figures would be sufficient to show violation of Title VII. Historically, universities have responded to this approach by asserting that qualified women were considered for the position in question, but better qualified men also applied. In its desire to hire the best available, the university hired the man. This, the law permits. "A private plaintiff must prove she was, in fact, better qualified than every other applicant for the job...the burden of proof is monumental" (Divine, 1976, p. 434).

Two cases involving universities and women in science have kept the attention of academia for several years. In the first case, an assistant professor brought suit against the University of Pittsburg, et al., on the grounds that she was to be discharged because she was female. The woman, hired in 1967 for three years in a non-tenure tract assistant professor position in the biochemistry department of the university, had her contract revewed (again without tenure) in 1970 for an additional three-year period. Although the professor in question appeared to have met the university's requirements for tenure, she was notified by a letter dated March 8, 1972, that her contract would not be renewed. Because the letter was dated prior to March 24, 1972, the

date on which the 1972 Amendments to the Civil Rights Act passed, the university claimed her discharge did not come under the jurisdiction of the Act. In the 1977 hearing of the case, the court held that even though the professor was informed of her impending separation from the university before the passage of the Title VII Amendments, these Amendments were in effect because termination was not to become effective until June 30, 1973. (The professor had remained at the university as a result of a preliminary injunction restraining her discharge.) Although the court held that her discharge and refusal of tenure amounted to discrimination on the basis of sex, it further held that the plaintiff did not show reasonable likelihood of success on the merits of the original case. Therefore, the case was dismissed (Johnson..., 1977)

In a second, more recent case, the results were somewhat different. A sex discrimination suit brought by a female chemist against the University of Minnesota ended in a consent decree in which the university reformed its procedures for approving tenure and hiring, recruiting, promoting, and paying all academic, non-student employees. Additionally, the judge appointed a special master to evaluate complaints not otherwise resolved by the university's grievance procedure (Broad, 1980).

Conclusion

It is unlikely that the number of women employed in the physical science departments of the university will be significantly influenced by the legislation presently in existence. Title VII (and the Equal Protection clause of the Fourteenth Amendment) are not adequate to remedy the existing inequalities. It is not certain that the proposed Equal Rights Amendment would resolve the issue, but it may allow women to achieve the level of "suspect classification," a classification resulting in the application of the strict scrutiny standard in cases before the courts.

> The intent is laudable, but how realistic are the assumptions? Because we have fair trade legislation doesn't guarantee that our society is immune from price fixing practices, or because our society, at least on the surface, abhors violence doesn't assure us we will be free from unjust persecution. The issue of discrimination, like so many other social issues, is just too complex to expect its remedy through legal controls (Chapman, 1978, p. 98).

References

Abelson, Ph. H. Women in science-related activities. In A. M. Briscoe & S. M. Pfafflin (Eds.), Expanding the role of women in the sciences (Vol. 323), 1979.

Baer, J. A. The chains of protection. Westport, Conn.: Greenwood Press, 1978.

Bernard, J. Where are we now? Some thoughts on the current scene. Psychology of Women Quarterly, 1976, 1 (1), 21-37.

Broad, W. J. Ending sex discrimination in academia. Science, 1980, 208, 1120-1122.

Byrn, K. Sexism in science: women fight back. Science Digest, 1975, 78, 26-34.

Chapman, J. B. Male and female leadership styles: the double bind. In J. A. Ramaley (Ed.) Convert discrimination and women in the sciences. Boulder, Colorado: Westview Press, 1978.

Cohen, M., Nage., T., & Scanlon, T. Equality and preferential treatment. Princeton, New Jersey: Princeton University Press, 1977.

Demand for chemists is good this year. Chemical and Engineering News, 1979, 57 (43), 40-42.

Divine, T. M. Women in the academy: sex discrimination in university faculty hiring and promotion. Journal of Law and Education, 1976, 5 (4), 429-451.

Dothard v. Rawlinson. 97 S. Ct. 401 (1977).

Douvan, E. The role of models in women's professional development. Psychology of Women Quarterly, 1976, 1 (1), 5-20.

Edwards, H. T. Sex discrimination under Title VII: some unresolved issues. Labor Law Journal, July 1973, 24, 411-423.

Fields, C. M. Pressure colleges on bias, U.S. told. The Chronicle of Higher Education, 9 June, 1980, p. 11.

Gould, S. J. Women's brains. New Scientist, 2 November, 1978, 364-366.

Green, A. A. Women on the faculties of chemistry departments offering doctoral studies in chemistry. Washington, D. C.: American Chemical Society, 1978.

Green, A. A. Women on the faculties of chemistry departments offering doctoral studies in chemistry. Washington, D. C. American Chemical Society, 1980.

Griggs v. Duke Power Co., 401 U.S. 424, 91 S. Ct. 849 (1971).

Hill, M. Sex discrimination under Title VII and the constitution: a legal analysis. Labor Law Journal, September, 1978, 29 570-581.

Hockfelder, C. G. Equal rights--where are we now? Illinois Bar Journal, June, 1976, 64, 558-567.

Holahan, C. K. & Gilbert, L. A. Interrole conflict for working women: careers versus jobs. Journal of Applied Psychology, 1979, 64 (1), 86-90.

Hornig, L. S. Scientific sexism. In A. M. Briscoe & S. M. Pfafflin (Eds.), Expanding the role of women in the sciences (Vol. 323). New York: The New York Academy of Science, 1980.

Howe, R. (Ed.) Women and the power to change. New York: McGraw-Hill, 1975.

Johnson v. University of Pittsburg. 435 F. Supp 1328 (1977).

Kennedy, J. P. Sex discrimination: state protective laws since Title VII. Notre Dame Lawyer, February, 1972, 47, 514-549.

Kistiakowsky, V. Women in physics: unnecessary, injurious, and out of place? Physics Today, 1980, 33, 32-40.

Larson, A. & Duke, J. B. Employment discrimination (Vol I). New York: Mather Bender, 1975.

National Research Council. Summary Report, 1972: Doctorate recipients from the United States universities. Washington, D. C.: National Science Foundation, 1973.

National Research Council. Summary Report, 1973: Doctorate recipients from the United States Universities. Washington, D. C.: National Science Foundation, 1974.

National Research Council. Summary Report, 1974: Doctorate recipients from the United States universities. Washington, D. C.: National Science Foundation, 1975.

National Research Council. Summary Report, 1975: Doctorate recipients from the United States universities. Washington, D. C.: National Science Foundation, 1976.

National Research Council. Summary Report, 1976: Doctorate recipients from the United States universities. Washington, D. C.: National Science Foundation, 1977.

National Research Council. Summary Report 1977: Doctorate recipients from the United States universities. Washington, D. C.: National Science Foundation, 1978.

National Research Council. Summary Report 1978: Doctorate recipients from the United States universities. Washington, D. C.: National Science Foundation, 1979.

Pendleton, D. Women in Science: Reshaping the Stereotypes. Science News, 1975, 107, 171, 181.

Phillips v. Martin-Marietta Corp., 400 U. S. 542 (S. Ct., 1971).

Portwood, J. D. & Koziara, K. S. In search of equal employment opportunity: New interpretations of Title VII. Labor Law Journal, June, 1979, 30, 353-360.

Raloff, J. Fear of figuring. Science News, 1978, 113 (13), 200.

Randall, J. Women's place in scientific research - a new look at an old problem. Change, 1978, 10 (2), 46.

Rawls, R. L. & Fox, J. L. Women in academic chemistry find rise to full status difficult. Chemical and Engineering News, 1978, 56 (37), 26-36.

Reed v. Reed, 404 U. S. 71 (1971).

Roark, A. C. Senate Panel would spend $23-million to encourage women to go into science. The Chronicle of Higher Education, 5 May, 1980, p. 15.

Rossi, A. S. & Calderwood, A. (Eds.). Academic women on the move. New. York: Russell Sage Foundation, 1973.

Rossiter, M. W. Women scientists in America before 1920. American Scientist, 1974, 62, 312-323.

Sex discrimination in higher education: constitutional equality for women? Journal of Family Law, 1971, 10, 327-343.

Still many barriers to women in science. Science News, 1977, 112, 279.

Stimpson, C. R. (Ed.). Discrimination against women: Congressional hearings on equal rights in education and employment. New York: R. R. Bowker Co., 1973.

Tidball, M. E. & Kistiakowsky, V. Bacculaureate origins of American scientists and scholars. Science, 1976, 193, 646-652.

Tobias, S. Overcoming math anxiety. New York: W. W. Norton, Inc., 1973.

Vetter, B. M. Working women scientists and Engineers. Science, 1980, 207, 28-34.

Wehrwein, A. C. Woman chemists gets $100,000 in settlement of sex-bias suit. The Chronicle of Higher Education, 28 April, 1980, pp. 1, 10.